## AMENDMENT

(amendment based upon the provision of Article 11 of said Law)

To: Examiner of the Patent Office

- Identification of the International Application PCT/JP03/08197
- 2. Applicant

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4. Item to be amended: Description and Claims

## 5. Subject Matter of Amendment

- (1) The words "3 or 4" which appears on page 8, 11th line from the bottom should be amended as "3 to 5".
- (2) The words "3 or 4" which appears on page 11, 11th line from the bottom should be amended as "3 to 5".
- (3) The words "3 or 4" which appears on page 14, 19th line from the bottom should be amended as "3 to 5".
- (4) The words "3 or 4" which appears on page 17, 12th line from the bottom should be amended as "3 to 5".
- (5) The words "3 or 4" which appears on page 22, 14th line from the bottom should be amended as "3 to 5".
- (6) The words "3 or 4" which appears on page 65, last line should be amended as "3 to 5".
- (7) The words "3 or 4" which appears on page 70, last line of claim 22 should be amended as "3 to 5".
- (8) The words "n=3 or 4" which appears on page 75, first line should be amended as "n is 3 to 5".

## 6. List of Attached Documents

(1) Replacement sheets of pages 8, 11, 14, 17, 22, 65, 69, 70, 74 and 75

$$\operatorname{Br} \longrightarrow 0$$

$$0$$

$$0$$

$$0$$

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## Formula I

Also, the structure containing nitrobenzene can be constructed with a compound represented by the following formula II:

Br 
$$H - (CH_2) n - C - 0 - N$$

Formula II

(wherein n is 3 to 5, and X is H or  $SO_3Na$ ).

In addition, at that time, it is preferable

that the substrate is a glass substrate having a
primary amino group formed on the surface, a sulfanil

(SH) group is bonded to the terminal of the substance,
and the amino group and the sulfanil group are bonded
together by a compound represented by the formula I

or the formula II through a reaction between the
amino group and the succinimide ester site of the
compound and a reaction between the sulfanil group
and the bromobenzyl site of the compound. Note that,

represented by the following formula I.

$$\mathsf{Br} \xrightarrow{\mathsf{NO}_2} 0 - \mathsf{N}$$

Formula I

Also, the structure containing nitrobenzen can
be with a compound represented by the following
formula II:

$$Br \xrightarrow{NO_2} H \xrightarrow{0} CH_2) n \xrightarrow{0} C \xrightarrow{0} X$$

Formula II

(wherein n is 3 to 5, and X is H or  $SO_3Na$ ).

In addition, at that time, it is preferable that the substrate is a glass substrate having a primary amino group formed on the surface, a sulfanil (SH) group is bonded to the terminal of the substance, and the amino group and the sulfanil group are bonded together by a compound represented by the formula I or the formula II through a reaction between the amino group and the succinimide ester site of the compound and a reaction between the sulfanil group and the bromobenzyl site of the compound. Note that,

be constructed with a compound represented by the following formula II:

Br 
$$\stackrel{NO_2}{\longrightarrow}$$
  $\stackrel{H}{\longrightarrow}$   $\stackrel{C}{\longrightarrow}$   $\stackrel{U}{\longrightarrow}$   $\stackrel{U}{\longrightarrow}$   $\stackrel{V}{\longrightarrow}$   $\stackrel{V}{\longrightarrow}$ 

10

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Formula II

5 (wherein n is 3 to 5, and X is H or  $SO_3Na$ ).

In addition, at that time, it is preferable that the substrate is a glass substrate having a primary amino group formed on the surface, a sulfanil (SH) group is bonded to the terminal of the substance, and the amino group and the sulfanil group are bonded together by a compound represented by the formula I or the formula II through a reaction between the amino group and the succinimide ester site of the compound and a reaction between the sulfanil group and the bromobenzyl site of the compound. Note that, the formation of a primary amino group on the glass substrate is preferably carried out by using a silane coupling agent having the primary amino group.

Alternatively, it is possible that the

20 substrate is a glass substrate having a sulfanil
group formed on the surface, an amino group is bonded
to the terminal of the substance, and the sulfanil
group and the amino group are bonded together by a

$$\begin{array}{c|c} & & & & & & \\ & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & &$$

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Formula I

Also, the structure containing nitrobenzene can be constructed with a compound represented by the following formula II:

Formula II

(wherein n is 3 to 5, and X is H or  $SO_3Na$ ).

In addition, at that time, it is preferable

10 that the substrate is a glass substrate having a
primary amino group formed on the surface, a sulfanil

(SH) group is bonded to the terminal of the substance,
and the amino group and the sulfanil group are bonded
together by a compound represented by the formula I

15 or the formula II through a reaction between the
amino group and the succinimide ester site of the
compound and a reaction between the sulfanil group
and the bromobenzyl site of the compound. Note that,
the formation of a primary amino group on the glass

$$\mathsf{Br} \overset{\mathsf{NO}_2}{\underbrace{\hspace{1cm}}} 0 - \mathsf{N} \overset{\mathsf{O}}{\underbrace{\hspace{1cm}}}$$

10

15

Formula I

Br 
$$NO_2$$
  $N - (CH_2) n - C - 0 - N$ 

Formula II

5 (wherein n is 3 to 5, and X is H or  $SO_3Na$ ).

At that time, as the method of fixing a desired substance on a substrate may be used one in which a glass substrate having a primary amino group formed on the surface is used as the substrate, a sulfanil (SH) group is bonded to one end of the substance, and bonding between the amino group and the sulfanil group is carried out by a compound represented by the formula I or formula II, that is, a reaction between the amino group and the succinimido ester site of the compound and a reaction between the sulfanil group and the bromobenzyl site of the compound. In this case, the formation of a primary amino group on the glass substrate can be carried out by using a silane

nitrogen laser beam.

5. The method according to claim 1, wherein the substance fixed on the substrate is nucleic acid.

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6. The method according to claim 1, wherein a structure containing nitrobenzene is selected as the partial structure to be disconnected by the irradiation of light.

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7. (amended) The method according to claim 6, wherein the structure containing nitrobenzene is constructed with a compound represented by the following formula I or II:

$$\mathsf{Br} \xrightarrow{\mathsf{NO}_2} 0$$

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Formula I

Br 
$$\stackrel{NO_2}{\longrightarrow}$$
  $\stackrel{H}{\longrightarrow}$   $\stackrel{C}{\longrightarrow}$   $\stackrel{O}{\longrightarrow}$   $\stackrel{N}{\longrightarrow}$   $\stackrel{N}{\longrightarrow}$ 

Formula II

(wherein n is 3 to 5, and X is H or  $SO_3Na$ ).

the nucleic acid is DNA.

19. The biochip according to claim 17, wherein the nucleic acid is RNA.

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- 20. The biochip according to claim 17, wherein the nucleic acid is PNA (peptide nucleic acid).
- 21. The biochip according to claim 16, wherein the partial structure to be disconnected by the irradiation of light has a structure containing nitrobenzene.
- 22. (amended) The biochip according to claim
  15 21, wherein the structure containing nitrobenzene is
  constructed with a compound represented by the
  following formula I or II:

$$\begin{array}{c|c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & &$$

·Formula I

Formula II

(wherein n is 3 to 5, and X is H or  $SO_3Na$ ).

23. The biochip according to claim 21, wherein the structure containing nitrobenzene is constructed with a compound represented by the following formula III:

10 Formula III

(wherein DMTrO is a dimethoxytrityloxy group and CNEt is a 2-cyanoethyl group).

- 24. A method of acquiring data on the mass of a bio-related substance on each matrix of a biochip having a plurality of bio-related substances fixed on a substrate in a matrix form and the mass of a substance which interacts with the bio-related substance, the method comprising the steps of:
- fixing the bio-related substance on each matrix

light used for analysis of the MALDI-TOF MS method.

- 29. The method according to claim 27, wherein the laser light used for analysis of the MALDI-TOF MS method is nitrogen laser light with a wavelength of 337 nm.
- 30. The method according to claim 27, wherein in the process (5), a structure containing

  10 nitrobenzene is selected as the partial structure to be disconnected by the irradiation with light.
- 31. (amended) The method according to claim 27, wherein the structure containing nitrobenzene is structured using a compound represented by the following formula I or II:

$$\begin{array}{c|c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & &$$

Formula I

Br 
$$H \rightarrow CH_2$$
  $n \rightarrow C \rightarrow C$ 

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- 75 -(where, n is 3 to 5, X=H or  $SO_3Na$ ). The method according to claim 31, wherein the substrate is a glass substrate on the surface of 5 which a primary amino group is formed, a sulfanil (SH) group is bonded to a 5'-terminal of the primer, and the amino group is bonded to the sulfanil group via a compound represented by the formula I or a compound represented by the formula II by a reaction 10 between the amino group and a succiimidoester site of the compound and a reaction between the sulfanil group and a bromobenzyl site of the compound. The method according to claim 32, wherein 15 the primary amino group is formed on the glass substrate by using a silane coupling agent having a primary amino group. The method according to claim 31, wherein 20 the substrate is a glass substrate on the surface of which a sulfanil group is formed, an amino group is bonded to a 5'-terminal of the primer, and the amino group is bonded to the sulfanil group via a compound represented by the formula I or a compound 25 represented by the formula II by a reaction between the sulfanil group and bromobenzyl site of the compound and a reaction between the amino group and a